

AMENDMENTS TO THE SPECIFICATION

Please replace the fifth full paragraph bridging pages 7 and 8 of the specification with the following:

When the apparent density of a negative electrode is less than 2.5 g/cm³, the volume occupied by a current collector is small; therefore, an increase in internal resistance or the cutting of an electrode plate tends to occur, and cycle performance deteriorates significantly. In addition, when the apparent density of a negative electrode is greater than 8.3 g/cm³, the proportion occupied by a current collector in the negative electrode rises ~~negative electrode declines~~ and the amount of active material per unit volume in the negative electrode decreases; therefore, the energy density becomes less than those of graphite/lithium transition metal oxides which have been well known.

Please replace the second full paragraph on page 16 of the specification with the following:

In addition, peaks in an X-ray diffraction pattern were noted to lie in both ranges of $30.1^\circ \leq 2\theta \leq 30.4^\circ$ and $30.5^\circ \leq 2\theta \leq 30.8^\circ$; in Batteries (A) to (D) of Embodiments 1 to 4, where the alloy containing Sn₄Ni₃ phase and Sn phase is used as the negative active material, the capacity retention at the 30th cycle was found to be as high as 95 % or more. On the other hand, in Battery (H), where the peak lay only in the latter range, the capacity retention at the 30th cycle was found to be as remarkably low as 20%. XRD analysis was conducted by means of a powder diffraction method with CuK α radiation, and the finding that the above described two phases layers were contained in the alloy was confirmed by using EPMA, as well as the peak analysis by XRD. Hereinafter, for the materials prepared by means of ball milling, confirmation was performed in the same manner.

Please replace the third full paragraph on page 16 of the specification with the following:

In this example, Cu foil of 27 mm in width and 14 μm in thickness was immersed in a commercially-manufactured Sn-Ni plating solution (Kojundo Chemical Lab. Co., Ltd., SNS-200E). After that, using the Sn-Ni alloy containing 28 mass% of Ni in the counter electrode, electricity was conducted so that the cathode current density becomes 2 A/dm² ~~2 A/dm³~~, and Sn-Ni alloy was synthesized on the Cu foil. After washed with ion exchange water, this material was dried at 150 °C, and thus the negative electrode was prepared. As a result of conducting the quantitative analysis of element, the composition of this Sn-Ni alloy was found to be 85 mass% of Sn and 15 mass% of Ni. In addition, in the X-ray diffraction pattern of this Sn-Ni alloy, the peaks due to CuK α radiation lay at $2\theta = 30.3^\circ$ and 30.6° . Except for using this negative electrode, Battery (J) of Embodiment 5 was manufactured in an identical manner to that of Embodiment 1.

Please replace the second full paragraph on page 25 of the specification with the following:

In addition, Fig. 6 shows the relationship between the Z value, which is the ratio of the mass of Sn_4Ni_3 phase (m_1) (~~m1~~) to the mass of Sn phase (m_2) (~~m2~~) in alloy X used in the negative electrode of these batteries, and the battery swelling. Table 8 and Fig. 6 revealed the following.

Embodiments 26 and 261 Embodiment 26, Comparative Examples 8 to 10

Z value of alloy X was set to be 1.1; except for the above, two pieces of Battery (Y10) of Embodiment 26 were manufactured in an identical manner to that of Embodiment 19. In this negative electrode, the mass of the negative composite layer per unit area of one side surface of the current collector was set to be 8.35 mg/cm^2 and, in the positive electrode, the mass of the positive composite layer per unit area of one side surface of the current collector was set to be 21.62 mg/cm^2 so that the designed capacity of the completed battery can be $695 \pm 5 \text{ mAh}$.

Please replace the fifth full paragraph bridging pages 26 and 27 of the specification with the following:

In the battery of Comparative Example 9, a mixture of a material consisting of Sn_4Ni_3 phase alone and graphite was used as the negative active material. 20 mass% of a material consisting of only Sn_4Ni_3 phase and 80 mass% of graphite were mixed sufficiently in a mortar to prepare the negative active material. A paste was mixed and prepared so as to consist of 50 mass% of this negative active material, 5 mass% of PVdF and 45 mass% of NMP, and applied to both surfaces of Cu foil of 27 mm in width and $10 \mu\text{m}$ in thickness; the coated foil was dried at 150°C to evaporate NMP and then pressed to adjust the porosity; and thus the negative electrode was provided. Except for using this negative electrode, two pieces each of Battery (Y12) of Comparative Example 9 Comparative Example 11 were manufactured in an identical manner to that of Embodiment 19.

Please replace the first full paragraph on page 31 of the specification and replace it with the following:

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Table 13 and Fig. 7 revealed the following. In Batteries (Y10) and (Y14) to (Y18) of Embodiments 26 to 31, where S value of the negative active material falls within the range of 0.05 to 3.5, battery swelling was small, not greater than 0.14 mm, and capacity retention at the 50th cycle was high. While, in Battery (Y19) of Embodiment 11c, where S value is 0.03, and Battery (Y20) of Embodiment 12c, where S value is 4.0 0.30, battery swelling was not less than 0.25 mm, and capacity retention at the 50th cycle was low.

Please replace the first full paragraph on page 33 of the specification with the following:

In alloy Y used in the negative electrode of Battery (Y21) of Embodiment 32 Embodiment 31, Ag₃Sn phase is present in addition to Sn phase and Sn₄Ni₃ phase. This indicates that it is possible to contain a phase other than Sn phase and Sn₄Ni₃ phase in alloy X to be used in the negative electrode of the non-aqueous electrolyte battery of the present invention. It is preferable that a phase other than Sn phase and Sn₄Ni₃ phase be not greater than 50 mass% with respect to total mass of alloy Y. This is due to the reason that the effects based on the above described mechanisms, such as the increase in discharge capacity and the prevention of volume expansion/contraction or crack occurrence, become less.